VER
Video Equipment Rentals

DA6 OPERATORS MANUAL

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DRAWMER DA6
Stereo Distribution Pre-Amp

SAFETY CONSIDERATIONS

CAUTION - MAINS FUSE
TO REDUCE THE RISK OF FIRE REPLACE THE MAINS FUSE ONLY WITH THE SAME TYPE, WHICH MUST BE A CLASS 3, 230 VOLT, TIME DELAY TYPE, RATED AT 63mA WHERE THE MAINS INPUT VOLTAGE SWITCH IS SET TO 230 VOLTS AC. AND 120mA WHERE THE MAINS INPUT VOLTAGE IS 115 VOLTS AC. ALL FUSES MUST COMPLY WITH BS EN 60127-2:1991, SHEET III. THE FUSE BODY SIZE IS 20mm x 5mm.

CAUTION - MAINS CABLE
DO NOT ATTEMPT TO CHANGE OR TAMPER WITH THE SUPPLIED MAINS CABLE.

CAUTION - SERVICING
DO NOT PERFORM ANY SERVICING. REFER ALL SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

CAUTION - HEADPHONES
THE HEADPHONE AMPLIFIER IN THIS UNIT IS CAPABLE OF PRODUCING 1 WATT INTO 8Í SPEAKERS. DRAWMER DO NOT ACCEPT ANY RESPONSIBILITY FOR DAMAGE CAUSED TO OPERATOR HEARING OR SPEAKER DEVICES BY USE OF EXCESSIVE OUTPUT LEVELS.

INTRODUCTION

The distribution of mono and stereo balanced audio signals from a single source to multiple destinations has many applications including multi-zone sound reinforcement installation; live sports events coverage; broadcast studios; video suites; duplication houses or where high quality audio has to be distributed to a number of locations down long cable runs.

The Drawmer DA6 is a six channel stereo output (or twelve mono) distribution amplifier featuring XLR balanced connections. Optional transformer balanced outputs are offered for instanced where electrical isolation of remote equipment is required. The electronically balanced stereo input features individual left/right level controls with LED bargraph metering enabling the correct balancing of stereo material or two mono signals.

Each of the six output pairs incorporate further left/right level controls and a Mono/Stereo switch which will mix two stereo signals, or, connect a single mono signal to both stereo outputs. The monitor section consists of a channel select so that the individual left/right output level of each channel can is displayed on the output LED bargraph and can be simultaneously heard at the front-panel headphone jack. An auxiliary pair of balanced output jacks provide a facility to connect further DA6 units where even more distribution is required. These outputs are post input gain trim, and may be fitted with optional output isolating transformers.

INSTALLATION

The DA6 is designed for standard 19" rack mounting and occupies 1U of rack space. Avoid mounting the unit directly above power amplifiers or power supplies that radiate significant amounts of heat. Always connect the mains earth to the unit. Use fibre or plastic washers to prevent the front panel becoming marked by the mounting bolts.

AUDIO CONNECTIONS

Input and Output audio connections are provided via balanced XLRs at a level of +4dBu. This applies to both inputs and outputs. The wiring convention being: Pin 1 Ground; pin 2 Hot; and pin 3 Cold. For use with unbalanced systems, the Cold pin 3 must be grounded at both input and output inside the XLR connectors.

The Stereo Link Outputs are balanced 1/4" (TRS) jack sockets, where Tip connection is Hot; Ring is Cold; and Sleeve is Ground. These connections are offered for chaining multiple DA6 units if there is a requirement for more than 6 stereo outputs.

INTERFERENCE

If the unit is to be used where it maybe exposed to high levels of disturbance such as found close to a TV or radio transmitter, we suggest that the unit be operated using an optional wiring of the balanced configuration. The screens of the signal cables should be connected to the chassis connection on the XLR connector as opposed to connecting to pin1. The DA6 fully conforms to the EMC standards.

GROUND LOOPS

If ground loop problems are encountered, never disconnect the mains earth, but instead, try disconnecting the signal screen on one end of each of the cables connecting the outputs of the MX40 to the patchbay. If such measures are necessary, balanced operation is recommended.

ISOLATION TRANSFORMERS

The DA6 has the capability of being isolated at its outputs using low impedance (600) balanced transformers. Each output can be individually isolated, and it is possible to have mixed configurations where some outputs retain their default connection of electronically balanced. Isolating transformers can be factory fitted, or alternatively, retro fitted by a Drawmer appointed service agent, or a suitably qualified engineer. The isolating transformer is manufactured by Beyer (Gmbh) and has a part reference TR/BV310-101-031. The part reference from Drawmer stock is #6105. Any warranty will be void if isolating transformers are fitted by non-approved methods, or, if unspecified transformers are fitted.

MONITOR HEADPHONES

For the purposes of monitoring each output, a stereo 1/4" (TRS) jack socket is offered on the front panel. This having the standard wiring convention of Tip being Left; Ring being Right; and Sleeve being common Ground. This output is capable of driving headphones with an impedance between 8 and 600 . The amplifier has an output of approximately 1Watt. Caution is required when operating at high output levels with low impedance headphones.

POWER CONNECTION

The DA6 unit will have been supplied with a power cable suitable for domestic power outlets in

your country. For your own safety it is important that you use this cable to connect to the mains supply earth. The cable should not be tampered with or modified.

The power supply socket has an integral fuse drawer containing the power fuse (and a spare). Removal of the drawer is only possible with the power cord removed. The fuse should never blow under normal operation. If the fuse is suspected of having blown, then a fault will have occurred and this fault condition should be inspected by a qualified service engineer. When changing the fuse, always comply with the Safety Instructions.

If, for some reason, the unit is to be operated at a mains input voltage which is different to that as supplied, the following procedure must be carried out by a qualified technical engineer. If the voltage change process is to be repeated often, a simple switch can be fitted to simplify this procedure, this part (item # 7026) is available via your Drawmer dealer.

1: Disconnect the unit from the mains.
2: Using a number 1 size pozidrive screwdriver, remove the seven self-tapping screws that retain the top cover. (Two screws are found along each side; two along the top edge at the rear; and the upper screw on the front facia panel).
3: Remove the power supply unit (PSU) module by removing the four pozidrive screws: two holding the mains input connector; two along the bottom printed circuit board edge.

For conversion to 115Volt AC (previously set to 230Volt AC)

4a: De-solder and remove the single link marked K1.
Fit two links in the positions K2 and K3.
5a Exchange the 63mA fuse for a similar type rated at 32mA.

For conversion to 230Volt AC (previously set to 115Volt AC)

4b: De-solder and remove the two links marked K2 and K3.
Fit a single link in the position K1.
5b Exchange the 32mA fuse for a similar type rated at 63mA.

In both cases:

6: Replace the power supply using the four screws.
7: Ensure the jumper connector (P2) is correctly aligned.
8: Replace the top cover using the seven screws.

CONTROL DESCRIPTION

The DA6 has been designed for ease of use. It operates on balanced or unbalanced signal levels in the range -15dB to +15dB.

Input L&R

These controls should be used to set the optimal input gain for both Left and Right signals. Use the display above to ensure the correct operating levels are being attained. Adjustment in the range +/-15dB is possible. Separate controls are offered to permit the re-alignment of any offset stereo image.

Input Display

Since the DA6 is normally used as a line amplifier, then it is quite acceptable to see' signals in the positive gain region of this display. However, ensure that the +15dB LED never illuminates other than for brief instances, otherwise distortion will occur.

Output L&R

These controls should be used to set the optimal output level to match the input section of the connected device, for both Left and Right signals. Adjustment of +/-15dB is possible. Normally, any stereo image offset will have been corrected by the Left/Right input controls. However separate output controls are also offered to give total control of the stereo image.

Mono/Stereo

Selects whether the output is to be separate Stereo signals or summed' to produce a Mono signal. LED show the status.

Chan Select

This rotary switch selects which stereo (or mono) output is to be routed through to the stereo headphone amplifier.

H/Phone

This control determines the amount of headphone amplifier drive. Caution should be used when using high output levels and low impedance headphones.

Output Display

This display shows the stereo output levels of the selected channel feed to headphones, removing the need to utilise headphones as a method of monitoring the output signals.

DA6 TECHNICAL SPECIFICATIONS

INPUT IMPEDANCE:15K Ohms

OUTPUT IMPEDANCE:33 Ohms (electronically balanced)

MAX. INPUT LEVEL: Bal. +23.5dB Unbal. +18dB

MAX. OUTPUT LEVEL: Bal. +22.5dB Unbal. +17.5dB into 600 Ohms

HEADPHONE AMPLIFIER: 1 Watt into 8 Ohms

HEADPHONE IMPEDANCE: 8 Ohms to 600 Ohms

NOISE: Better than -95dB (Gain=0dB @ 22Hz - 22KHz)

CROSSTALK: > -90dB @ 10KHz (Input grounded, any channel output)

DISTORTION: @ 1KHz Output 0dB 0.008%
+10dB 0.008%
+20dB 0.015%

BANDWIDTH: 18Hz to 32Khz -1dB

TRANSFORMER OPTION
Outputs fitted with the specified BEYERDYNAMIC transformer will have the following specification:-

Max. Output Level: +18.8dB into 600 Ohms.

Distortion @ 1kHz 0dB 0.008%
+10dB 0.01%
+15dB 0.05%

Bandwidth 10k Load
Output 0dB: 18Hz to 58kHz (-3dB point)
25Hz to 34kHz (-1dB point)

Output +10dB: 66Hz to 58kHz (-3dB point)
87Hz to 34kHz (-1dB points)

Bandwidth 600 Ohm Load
Output 0dB: 22Hz to 22kHz (-3dB point)
31Hz to 12kHz (-1dB point)
Output +10dB: 82Hz to 22kHz (-3dB point)
109Hz to 12kHz (-1dB point)

The Beyerdynamic transformer has a load dependent insertion loss of 4dBs into 600 (0.3dB into 10k). The transformer output is optimised for loads between 600 and 1M in parallel with a capacitance of 5pF to 150pF.

POWER REQUIREMENTS: 115Volt or 230Volt at 50-60Hz, 30 Watts